IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Sourour

Serial No.: 09/723,152

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Docket No.: 4015-784

Title: Multipath Interference Reduction for a
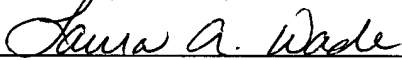CDMA System

Examiner: B. Deppe

Group Art Unit: 2634

Mail Stop NON-FEE AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA   22313-1450

RESPONSE PURSUANT TO 37 C.F.R. § 1.111

This paper is being filed in response to the Office Action mailed February 17, 2004

having a reply due date of May 17, 2004. Reconsideration and reexamination are respectfully

requested in light of the amendments and remarks below. While no fees should be required for

entry of this response, if any fees or charges are required, the Commissioner is hereby

authorized to charge them to Deposit Account 18-1167.

WRITTEN DESCRIPTION

Please amend the paragraph beginning at p. 13, line 28 as follows:

Figure 7 provides details for one embodiment of the modified RAKE receiver 200

introduced in Figure 5. The primary RAKE 202 includes one or more primary RAKE fingers 210

and an associated summing circuit 212. The interference estimation RAKE 204 includes one or

more interference estimators 214, along with a corresponding number of scaling multipliers 216,

and a summing circuit 218. As illustrated, the RAKE receiver 200 of the present invention is

configured to accommodate three propagation paths (paths 1, 2, and 3). It should be

understood that the RAKE receiver 200 may be configured for any desired number of

propagation paths.

Please insert the following paragraph prior to the paragraph beginning at p. 16, line 7:

Figure 7A depicts another embodiment of the modified RAKE receiver 200. According to

this embodiment, the scaled multipath interference estimates from scaling multipliers 216 are

subtracted on a per primary RAKE finger basis by differencing circuits 217, 219, 221. The

multipath interference-compensated primary RAKE finger signals are then combined by

summing circuit 206 to form a combined output signal of interest.

Please amend the abstract as follows:

A method and system reduce multipath signal interference in a CDMA receiver. The

CDMA receiver ~~comprising~~ including parallel first and second RAKE receivers receives a

multipath signal. The first RAKE receiver includes a number of individual RAKE fingers, each

operating with a defined finger delay matched to a propagation path delay. The output signal

from each RAKE finger includes multipath interference. The second RAKE receiver includes a

group of RAKE fingers corresponding to each RAKE finger in the first RAKE receiver. Each

group of RAKE fingers is configured to produce an estimate of the multipath interference in the

output signal generated by the corresponding RAKE finger in the first RAKE receiver. The estimated multipath interference signals are scaled, and then subtracted from the RAKE finger outputs from the first RAKE receiver to reduce multipath interference. Scaling coefficients are adjusted to ensure that such subtraction effectively reduces multipath interference.